SILICON CARBIDE SAMPLES FOR CVD DIAMOND FILM DEPOSITION WITH APPLICATION ON RASTILHO FOR MUSICAL INSTRUMENTS OF CHORD AND WAVES ANALYSIS TRANSMITTED BY THE SAMPLES

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Abstract

The diamond obtained by CVD (chemical vapor deposition) presents a high capacity of transmission of the sound. The sound speed in the diamond film is of the order of 18.000 m/s, while, by example, the sound speed in the aluminum is 6.420 m/s [1]. That proprierty permits the application of in "rastilhos"* of musical instruments of chord for the transmission of sound. For so much to first phase of preparation of the substrate was the cut of the SiC bulks, followed by the preparation of the surfaces by means of scratch and scouring in order to a good adhesion of the film. The CVD diamond film was deposited, on the substrates, utilizing hot filament reactor doing use of a hidrogênio and methane mixture. Parallel it was carried out a study about the capture of the sound and an exit wave analysis. In this phase, was utilized a spanish guitar which had his sonorous waves grasped by a microphone, these were visualized in an oscilloscope. The waves presented a very irregular form compared with a sinusidal wave. For it improve the viewing of the wave, was necessary the use electronic screens, that permitted the isolation of the fundamental harmonic one that interested.

* Piece that transmits the vibration of the spanish guitar chords for the acoustic box.

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